OBJECTIVES: Although opioids play a central role in the treatment, and palliation of many medical conditions, there is a large and growing problem of abuse nationally and in South Carolina particularly. According to the 2009 National Survey on Drug Use and Health, more than 5 million Americans abused prescription opioid painkillers in January 2011. Reports show an increase in cases of doctor shopping, prescription forgery, illicit prescribing and dispensing, and other diversion activities. We determine patterns of opioid prescribing in South Carolina through an epidemiologic analysis and geo-spatial mapping of South Carolina prescription data for 2010-2011. **METHODS:** Using de-identified data from the South Carolina Reporting and Identification Prescription Tracking System (SCRIPTS), we conducted a state-wide epidemiological analysis of patient and prescriber opioid prescribing patterns including distributions of number of prescriptions, number of prescribers and of pharmacies used by each patient. Additionally, we conducted County- and Zip Code-level analyses of opioid prescribing patterns. **RESULTS:** Prescriber deciles were created representing 10% groupings of prescribers based on controlled substances (CS) II – IV prescription volume. The top 10% of SC prescribers wrote more than 60% (N=2,158,574) of the total CS II – IV prescriptions in 2010, and 58% of total opioid prescriptions. The top pharmacy decile dispensed about 44% of total prescriptions and about 37% of opioid prescriptions. Five Zip Codes had the highest percent of opioid prescriptions out of total prescriptions (Charleston, Richland, Greenville, Barnwell and Aiken). In 2010 counties with the highest percent of prescriptions (>61%) were Greenville, Richland, Barnwell and Charleston, whereas in 2011 the counties with the highest percent of prescriptions were Greenville, Chester, Richland and Charleston. **CONCLUSIONS:** Our findings indicate a relatively small percentage of providers, concentrated in a few counties, account for most opioid prescriptions. This group represents a potential target for physician education and engagement in handling pain management and appropriate use of opioids.

PSY64

TREATMENT PATTERNS AMONG CHRONIC USERS OF IMMEDIATE-RELEASE OXYCODONE INITIATING TREATMENT WITH EXTENDED-RELEASE OPIOIDS

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OBJECTIVES: Many chronic users of immediate-release opioids (IROs) initiating treatment with extended-release opioids (EROs) are steered towards generic options, even if switching molecules is required. Switching may introduce uncertainty for patients regarding dosing, titration and efficacy. This study assessed treatment patterns among patients chronically-treated with IR oxycodone who initiate ERO treatment, and describes differences between patients initiating treatment on the same molecule and those who switch molecules. **METHODS:** Commercially-insured patients aged <65 were selected from de-identified OptumHealth Reporting and Insights claims data, 2011-2014. Chronic IR oxycodone users were defined as patients with ≥2 continuous prescriptions and ≥60 days supply leading up to initiation of ERO treatment (index). Patients were excluded if they had claims for EROs during a 6-month baseline period or possible opioid replacement therapy (methadone/buprenorphine) during the 6-month follow-up period, and were required to be continuous users of opioids throughout follow-up. The sample was stratified based on whether ER therapy was initiated on the same molecule (ER oxycodone) or different molecules. Treatment patterns and pill count were assessed for both cohorts. **RESULTS:** During baseline, 2,318 chronic IR oxycodone users initiating EROs were identified, with 933 (40%) initiating ER oxycodone and the remainder switching molecules. Same-molecule patients were more likely to continuously use index therapy (41.9% vs. 33.6%), and less likely to switch to a different ERO (12.3% vs. 26.0%). Among different-molecule patients switching EROs, nearly half switched to ER oxycodone. Concomitant use of IR oxycodone was observed in both groups, but continuous index ERO users in the same-molecule cohort saw a greater decline in IR pill count compared with the different-molecule cohort (-173.3 vs. -105.9). **CONCLUSIONS:** Chronic IR oxycodone patients initiating EROs on the same molecule were more likely to remain on index treatment, and those remaining on treatment experienced a greater decline in IR oxycodone pill count.

PSY65

CROSS-STATE COMPARISON OF MEDICAID ANTI-OBESITY MEDICATION COVERAGE: 1999-2013

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OBJECTIVES: More than one third of adults in the U.S. are considered obese (body mass index ≥ 30kg/m2). Because of their relatively low socioeconomic status, the Medicaid population is disproportionately affected by obesity. The objective was to compare the utilization of and spending on anti-obesity medication, specifically orlistat (amphetamine-based weight-loss drugs were highly restricted by Medicaid because of their potential for abuse), by state Medicaid programs from 1999-2013. Orlistat, approved by the FDA in April 1999, is a gastric and pancreatic lipase inhibitor that reduces dietary fat absorption. **METHODS:** Using the individual state files for Medicaid outpatient drug utilization maintained by the Centers for Medicare and Medicaid Services, quarterly utilization and (pre-rebate) expenditure data from 1999-2013 were extracted for all branded and generic orlistat prescriptions for Medicaid beneficiaries. Descriptive statistics were computed. **RESULTS:** In 1999, North Carolina reimbursed 5,242 prescriptions; Louisiana 3,712 prescriptions; and Wisconsin 1,460. Subsequently, several other states, such as California, Connecticut, Kentucky, Minnesota, New Jersey, and Pennsylvania came on board with a fairly large number of prescriptions reimbursed (6,041 in California in 2003). In other states, like Ohio and New York, no orlistat prescriptions were reimbursed until the last years of the study, most likely representing a policy shift. In 2001,when Medicaid utilization was at its peak, a total of 87,811 prescriptions were reimbursed across the country. By 2013, due to several factors including an over-the-counter version of orlistat approved by the FDA in 2010 and a loss in popularity due to gastrointestinal side effects, only 3,424 prescriptions were reimbursed. Reimbursement per prescription varied by state; in 2001, the national average was $107. **CONCLUSIONS:** Despite an obesity epidemic, very few states reimbursed pharmacies for weight-loss medications, including orlistat. Understanding the different decisions that the states made with respect to weight-loss pharmacotherapy is a goal for future research.

PSY66

HYDROCODONE: A REVIEW OF THE LITERATURE

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OBJECTIVES: An estimated 100 million adults suffer from chronic pain in the US. The total cost of pain ranges from $560 to $635 billion in 2010, exceeding that of heart disease ($309 billion), cancer ($243 billion), and diabetes ($188 billion). The 2011 IOM report on pain states that effective pain management is "a moral imperative" for health care providers. Many pharmaceutical options are available to prescribers, most notably prescription opioids. Prescription opioids are analgesics which can be effective for the treatment of pain when monitored appropriately. Hydrocodone combination products are among the most commonly prescribed opioids in the US. The objective of this study was to perform a comprehensive literature review of the use and impact of hydrocodone in the US. **METHODS:** A comprehensive literature review was conducted regarding the use and impact of hydrocodone in the US. **RESULTS:** The US consumed 80% of the global supply of opioids and 99% of the global hydrocodone supply. From 1997 to 2007, hydrocodone use increased 280%. Due to their potential for harm and abuse, hydrocodone combination products were recently rescheduled from Schedule III to Schedule II by the U.S. Food and Drug Administration (FDA). Single entity hydrocodone extended release was recently approved by the FDA and has been met with much controversy due to its potential for abuse. **CONCLUSIONS:** Hydrocodone use is highly prevalent in the US. Long-term use of hydrocodone and single entity hydrocodone use need to be actively monitored for appropriateness. Future studies should assess the impact of rescheduling.

PSY67

ESTIMATION OF MEDICAL EXPENDITURE ASSOCIATED WITH OPIOIDS USAGE IN CHRONIC NON-CANCER PAIN: A CROSS-SECTIONAL STUDY BASED ON MEDICAL EXPENDITURE SURVEY AND PANEL DATA

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OBJECTIVES: Chronic or long-term pain disturbs numerous lives, which is one of the most prevalent reasons for doctor visits and reduces people's quality of life. A common treatment for long-term non-cancer pain (CNCP) is long-term opioid therapy. However, the effectiveness of opioids for CNCP is still controversy and associated medical expenditure is vague. We investigated the impact of opioid treatment on the total medical expenditures for U.S. general population. **METHODS:** We used the 2011 Medical Expenditure Panel Survey, a nationally representative survey for health care use, expenditures and health insurance coverage of the U.S. civilian non-institutionalized population. After excluding individuals with the priority condition of cancer and current diagnosis of cancer, we used response to the SF-12 questionnaire and ICD codes to identify chronic pain conditions. The final sample includes 11,858 individuals with 355 receiving opioid treatments. We conducted bivariate statistical analysis to compare demographic characteristics, clinical conditions and total expenditures for CNCP patients' between on- and off-opioid treatment groups. Using a multivariate generalized linear model (GLM), we estimated the impact of opioid treatment on medical care expenditures for CNCP patients, after adjusting for covariates. **RESULTS:** The bivariate analysis results show statistical significant differences in the use of opioid treatments associated with race/ethnicity, education level, smoking status, physical activity, and health status. The unadjusted mean total annual medical expenditures were $29,914 for opioid users and $8,564 for non-opioid users. The GLM regression results show the opioid treatment is associated with $3,419 to $9,120 in additional medical expenditure, after adjusting covariates. **CONCLUSIONS:** Appropriate management for CNCP is critical to improve their perceived health and wellbeing and to decrease medical expenditures. However, due to the cross-sectional design, there might be some higher spending for opioid users results from unobserved patient severity, as well as no treatment outcome measures, which needs further study.

PSY68

DOSING PATTERN ANALYSIS FOR BIOLOGICS IN THE TREATMENT OF PSORIASIS IN CANADA: INDICATION-SPECIFIC INFORMATION RETRIEVED FROM ADMINISTRATIVE CLAIMS DATABASE

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OBJECTIVES: High cost biologic treatments for diseases such as plaque psoriasis, raise growing concerns over the increasing cost to the health care systems that are funding these treatments. Administrative databases can generate important information about the way these drugs are prescribed in a "real world" setting. The objectives of this analysis were to determine the initial dosing and identify dose escalation patterns for biologics in the treatment of psoriasis in Canada. **METHODS:** A sample of data from patients covered by the public (Quebec and Ontario) and private drug plans in Canada, who received a biologic between January 2010 and August 2012 for at least 12 months, were retrieved (IMS Brogan, IMS Longitudinal Claims Dataset, Jan 2010 - Aug 2013, reported Nov 2013). A specific algorithm was developed based on prescriber information and concomitant medications to capture claims associated to psoriasis. Dosing analysis was performed for four biologics approved for psoriasis in Canada: adalimumab, etanercept, infliximab and ustekinumab. Dose escalation was defined as a 20% dose increase above the previous dose, excluding induction. **RESULTS:** A total of 4,510 patients were identified and met inclusion criteria. The average first year dose was higher than years 2 and 3, consistent with

the induction period for each drug. Overall, 63% of patients experienced a dose escalation, of which 68% occurred within the first year, excluding induction. Peak frequency of dose escalation occurred between weeks 11-30. Calculated daily, escalated dose was greater than maintenance by 9% for adalimumab, 14% for etanercept, and 28% for ustekinumab. **CONCLUSIONS:** Across all treatments, dose escalation was recorded in over 60% of patients, most often in the first year of treatment, indicating that patients may require additional doses to maintain response. These data highlight the need for new treatments which provide high sustained efficacy, with a rapid onset of action.

PSY69
EFFECT OF FLORIDA'S PRESCRIPTION MONITORING PROGRAM AND PILL-MILL LAWS ON OPIOID PRESCRIBING AND UTILIZATION
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OBJECTIVES: To quantify the effect of the implementation of Florida's PMP and pill mill laws on overall and high risk opioid prescribing, utilization, and dispensing. **METHODS:** We applied comparative interrupted time series analyses to IMS Health LRx LifeLink data to characterize the effect of PMP and pill mill law implementation on a closed cohort of patients, prescribers and retail pharmacies between July 2010 and Sept 2012 in Florida (intervention state) compared with Georgia (control state). We conducted numerous sensitivity analyses including varying the length of observation and modifying requirements for continuous observation of individuals throughout the study period. **RESULTS:** From July 2010 to September 2012, a cohort of 2.6 million patients, 431,890 prescribers and 2,829 pharmacies was associated with approximately 480 million prescriptions in Florida and Georgia, 8% of which were for opioids. Average total monthly opioid volume (355.1 vs. 124.2 kilograms [kg]), average dose per transaction (55.2 vs. 46.6 milligrams [mg] MEDD), and average number of days supply (18.4 vs. 16.0 days) were each higher in Florida than Georgia prior to implementation of Florida's PMP and pill mill laws. Overall, Florida's laws were associated with statistically significant declines in opioid volume (3.7 kilograms/month) and MEDD (0.46 mg/month), without any change in days supply. Reductions were limited to prescribers and patients with the highest baseline opioid prescribing and utilization, respectively. Sensitivity analyses varying the time windows and enrollment criteria supported the main results. **CONCLUSIONS:** Implementation of PMP and pill mill laws in Florida was associated with decreases in prescription opioid dispensing relative to Georgia among patients and providers with high levels of opioid utilization at baseline.

PSY70
THE CHANGING COSTS OF CARING FOR HEMOPHILIA PATIENTS IN THE U.S.: INSURERS' AND PATIENTS' PERSPECTIVES
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OBJECTIVES: Hemophilia is an inherited condition requiring lifelong, expensive treatment. Initiating prophylaxis treatment with factors VIII (hemophilia A) or IX (hemophilia B) at an early age has been shown to be effective in improving health outcomes. In 2007 the medical advisory council of the National Hemophilia Foundation (NHF's MASAC) recommended prophylaxis treatment as the optimal therapy for these patients. The study objectives were:(1) To explore the economic burden over the patient's lifespan; (2) To quantify changes in factor VIII/IX utilization and related costs over the past decade. **METHODS:** A retrospective, US health insurance claim database (2004-2012) analysis was conducted. Males with ≥2 pharmacy claims for a hemophilia drug within 3 months, and continuous enrollment for ≥180 days were included. Patients utilizing inhibitor treatments were excluded. Annual payer and patient out-of-pocket (OOP) expenses were calculated by service category (inpatient, outpatient, medications), and stratified by patient's age and calendar year. Costs were adjusted to 2013USD. Annual supply days (ASD) per patient were calculated; ASDs over time were compared using a t-test. **RESULTS:** For hemophilia A (N=727), increase in payers' costs was observed during the first 4 decades of life, peaking at age 34 ($273,669) decreasing thereafter, and annual OOP staying constant at $2,589/year. For hemophilia B (N=161), an increase in payers' costs was observed during the first 3 decades of life peaking at age 29 ($281,981) decreasing thereafter with annual OOP at $2,401/year. Between 2007 and 2012, ASD per patient increased significantly for both factor VIII (ADVATE®: 160.5 vs. 249.9 days, p=0.00029) and factor IX (BENEFIX®: 132.8 vs. 214.7 days, p=0.0255) coinciding with payers' drugs cost over the same time period. (Hemophilia A: $186,283 to $212,747respectively; hemophilia B: $147,778 to $186,851 respectively). **CONCLUSIONS:** Over the past decade, the mean per patient consumption of factor replacement therapy has increased substantially, in line with new treatment guidelines.

PSY71
INCREASED LENGTH OF STAY FOR OBESE PATIENTS BY CHRONIC DISEASE
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OBJECTIVES: An obese body mass index (BMI) increases morbidities, however there are few chronic disease registries that can quantify the cost of obesity. Clalit Health Services (CHS), with complete longitudinal data of over 4 million members, provides an ideal format for comparing health care utilization between obese and non-obese patients to inform the need for improved health care policy. **METHODS:** For the years 2011-2013 inclusive, we took two random samples of 10,000 obese (BMI>30) patients and 10,000 normal and underweight (BMI<=25) from the CHS database both according to Clalit population age standard. We then extracted their additional chronic diseases from the CHS registry. Finally, we compared the average length of stay (LOS) for inpatient admissions between the groups, by disease. **RESULTS:** Obese patients with underlying chronic disease had, on average, a 27% increased LOS compared to non-obese patients with chronic disease. The greatest effect was seen among obese patients with chronic renal failure, whose LOS was 2.7 times or nearly 20 days longer. By disease: ischemic heart disease, 1.9 times or 10 days longer; hypertension 1.3 times or 4 days longer; congestive heart failure, 1.2 times or 3 days longer; and rheumatoid arthritis, 1.4 times or 2 days longer. Obese patients with diabetes and s/p cerebral vascular accident had a shorter LOS (0.8 times or 3 days, and 0.8 times or 4 days respectively). **CONCLUSIONS:** Obesity increases the LOS for all-cause hospital admissions among patients with various underlying chronic diseases. This may be due to insufficient diagnosis by the primary provider or specialist, inadequate medication dosing (eg, pain management), or inadequate support during an inpatient stay. A proactive health care policy is needed to guide the management of patients with chronic disease who are also obese, with the potential for cost-savings of interventional, pharmaceutical, or surgical treatment of obesity at baseline.

PSY72
THE AVAILABILITY AND EXPENDITURE OF ORPHAN MEDICINES IN POLAND
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OBJECTIVES: The aim of the present analysis was to identify the level of the availability and total expenditure of medicines for rare diseases with European authorization and orphan designation. In Poland all innovative medical technologies and services claiming public money founding have to be assessed by Agency for Health Technology Assessment (AOTM). Pharmacoeconomic evaluations of new therapies are required for all reimbursement decisions and orphan drug manufacturers cannot be exempted from providing a full pharmacoeconomic or HTA reports. The criteria of assessment connected with clinical and cost effectiveness (threshold is 3xGDP for ICUR/QALY) are the same for all kind of drugs. **METHODS:** All orphan designation admitted by European Medicines Agency (EMA) until the end of 2014 were reviewed and analyzed from the official website of EMA. Among 792 EMA's orphan registrations studied 78 (9,8%) applied to orphan drugs. We compared the outcomes with reimbursement list officially published by Ministry of Health. Then it was checked what was the share of orphan drugs in overall reimbursement spending. **RESULTS:** At the end of 2014 there were 28 orphan drugs available on the reimbursement list (36% of designed by EMA). The total public payer reimbursement spending was €2.41bn in 2012 and €2.26bn in 2013. Orphan drugs have only accounted for a small percentage of the overall drug budget in polish health care system (1,5% in 2012 and 3,2% in 2013). **CONCLUSIONS:** In the literature we can find opinions that the relatively low budget impact of orphan drugs is often used as an argument in reimbursement decisions. In Poland reimbursement was awarded to the minority of orphan drugs designed by EMA. Very strict requirements in order to ensure compatibility with law directives could potentially influence negative reimbursement decisions for orphan drugs.

PSY73
BARIATRIC SURGERY IN THE BRAZILIAN HEALTH CARE SYSTEM: RESOURCES UTILIZATION
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BACKGROUND: Obesity is a pathology that leads to several co-morbidities such as diabetes and hypertension. In Brazil obesity rates (BMI >30kg/m2) raised from 11.8% in 2006 to 17.5% in 2013. Bariatric Surgery is the most effective treatment to achieve excess weight lost for morbid patients. It is estimated that Brazil has around 1.8 million people with BMI >40kg/m2, considering that Brazil has an universal health care system and 25% of the population relies in the private health care sector, several people are eligible to get bariatric surgery **OBJECTIVES:** Evaluate the use of the resources dedicated to treat morbid obese patients in the Brazilian public health care system (SUS) from 2008 to 2013 **METHODS:** Revised data of expenditures, number of surgeries and length of stay related to bariatric surgery in the database of the IT Department of SUS (DATASUS) **RESULTS:** The number of certified hospitals that perform bariatric surgery increased by 35% and the percentage of states covered by certified hospitals rose from 60% to 74%. During the same period the number of procedures increased by 113%. Despite the increase in the number of procedures by 113%, the days of hospitalization required for surgeries increased only 52%; this is due the average length of stay reduction from 5.7 days to 4.1 days, showing a better efficiency among hospitals. The total expenditure in bariatric surgeries rose by 161%. **CONCLUSIONS:** Analysis demonstrated that the access to the bariatric procedure in Brazil has increased in the past five years. The hospitals' efficiency improved during the same period, decreasing the average length of stay. Today the Brazilian public health care system provides surgery to less than 0.75% of the eligible population and despite the access increase; more resources (physicals and infrastructure) are needed in order to treat the morbid obese population

PSY74
CANADIAN RETROSPECTIVE CLAIMS DATA ANALYSIS OF BIOLOGICS SWITCHING AND RETENTION PATTERNS IN PSORIASIS PATIENTS
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OBJECTIVES: To describe treatment patterns and cost in patients with PSO (psoriasis) receiving biologic therapies (BT). **METHODS:** A retrospective cohort of medication claims data from IMS Brogan Private (Canadian national) and Public (Ontario and Quebec) Drug Plan databases was analysed. Biologic-naïve PSO patients >18 years of age were selected between 01/01/2007 and 03/30/2011 and followed for 24 months to understand lines of therapy, retention on BT, and annual therapy costs. Target biologics included adalimumab, etanercept, infliximab and ustekinumab. **RESULTS:** 3,546 patients were identified. Of those, 44% initiated etanercept, 26% adalimumab, 19% ustekinumab, and 10% infliximab. 32% of patients remained on 1st line therapy, 16% switched, and 52% stopped therapy over the 24 month period. Median days on 1st line therapy was longer in public than private plans (502 vs. 357). Of those who switched, 556 received 2 lines, and 105 received 3 or more lines of BT. In a retention model of private plan patients, those who supplemented with non-biologic PSO therapies were 16% - 42% more likely to stay on BT than those tak-